

REMARKS

Status of the Application

Claims 1-32 were pending in the present Application.

Claims 1 and 6-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Obara et al. (US Pat. No. 5,661,380) in view of Park et al. (US Pat No. 6,181,093). The Applicant respectfully traverses these rejections.

Claims 2-5 and 15-32 were withdrawn from further consideration, leaving claims 1 and 6-14 for consideration in the present application.

Claim Rejections - 35 USC § 103

Claims 1 and 6-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Obara et al. in view of Park et al.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness, i.e., that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Previously presented claim 1 recites, in part, “obtaining a traction motor signal having at least one phase, wherein said traction motor signal is responsive to an operating condition of said traction motor **wherein said traction motor is electrically unexcited.**” (Emphasis added)

As the Examiner noted, “Obara et al is silent regarding motor signal is responsive to motor in an electrically unexcited state.”

In contrast to the present invention, Park et al. teach, “a commutation circuit for a sensorless three-phase brushless direct current motor.” (column 1, lines 9-11) “FIG. 8 illustrates a more detailed block diagram of the **starting** circuit 100 of FIG. 3. ... The starting circuit 100 additionally generates mask clock signals U_MSK, V_MSK, W_MSK to detect the phase voltage of the unexcited coil at the time of commutation.” (column 6, lines 32-45, emphasis added) “In **operation**, the mask clock signals U_MSK, V_MSK, W_MSK and the amplified signals A0-A2 are enabled at the unexcited point of each phase of the motor coil in order to detect the pure back electromotive force that is generated on the unexcited phase **from among the phases of the stator coil**.” (column 6, line 66 to column 7, line 4, emphasis added) That is, Park et al. teach a commutation circuit for a brushless direct current motor that is either starting or in operation. Because the brushless direct current motor is either starting or in operation, the brushless direct current motor is electrically excited. While Park et al. may teach that one phase of the three phases may be unexcited, the other two phases are excited because the motor is either starting or in operation. Thus, Park et al. do not disclose or suggest, “obtaining a traction motor signal having at least one phase, wherein said traction motor signal is responsive to an operating condition of said traction motor **wherein said traction motor is electrically unexcited**” as the Applicant claims in previously presented claim 1.

A reference should be considered in whole, and portions arguing against or teaching away from the claimed invention must be considered. *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986). Therefore, that Park et al. teach the brushless direct motor is electrically excited must be considered.

Because Park et al. do not disclose or suggest “**wherein said traction motor is electrically unexcited**,” a combination of Obara et al. and Park et al. will not result in the invention claimed in previously presented claim 1.

MPEP 2141, Section III RATIONALES TO SUPPORT REJECTIONS UNDER 35 U.S.C. 103 states, “The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious.” Moreover, as the Supreme Court recently stated, “*there must be some articulated reasoning with some rational*

underpinning to support the legal conclusion of obviousness.” *KSR Int’l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (emphasis added)).

In contrast to MPEP 2141, Section III, no rational was given in the Office Action to conclude that one of ordinary skill in the art would be motivated to combine Obara et al. with Park et al., which does not disclose or suggest a brushless direct current motor that is unexcited, to arrive at the claimed invention.

For at least these reasons, previously presented claim 1 and the claims dependent thereon are novel and patentable over Obara et al. in view of Park et al.

With regard to dependent claim 6, dependent claim 6 recites, in part, “converting said traction motor signal into a **two-phase signal** responsive to said traction motor signal.” (Emphasis added)

In contrast to dependent claim 6, Obara et al. teaches, “In the running back-up control circuit it is judged whether each of the sensors is normal or not. As for the speed sensor 6, the two outputs 6a and 6b are compared, and if there is no substantial difference between them, it is judged to be normal.” (column 4, lines 18-22) That is, the speed sensor 6 has two outputs, 6a and 6b, which are compared to each other. Because the two outputs are separate outputs independently indicating speed, the two outputs, 6a and 6b, are not a two-phase signal. Thus, Obara et al. do not disclose or suggest, “converting said traction motor signal into a **two-phase signal** responsive to said traction motor signal” as the Applicant claims in dependent claim 6. For at least this reason, dependent claim 6 and the claims dependent thereon are novel and patentable over Obara et al.

With regard to dependent claim 7, dependent claim 7 recites, in part, “applying said two-phase signal to **phase locked loop (PLL) circuitry** so as to create a PLL signal responsive to the frequency of said two-phase signal.” (Emphasis added)

In contrast to dependent claim 7, Obara et al. do not disclose or suggest any phase locked loop circuitry. Thus, Obara et al. do not disclose or suggest, “applying said two-phase signal to

phase locked loop (PLL) circuitry so as to create a PLL signal responsive to the frequency of said two-phase signal” as the Applicant claims in dependent claim 7. For at least this reason, dependent claim 7 and the claims dependent thereon are novel and patentable over Obara et al.

Conclusion

It is believed that the foregoing remarks fully comply with the Office Action and that the claims herein should now be allowable to the Applicant. Accordingly, reconsideration and allowance are requested.

If a communication with the Applicant’s attorney would assist in advancing this case to allowance, the Examiner is invited to contact the undersigned so that any such issues may be resolved.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,
CANTOR COLBURN LLP

By /Mark F. Samek/
Mark F. Samek
Registration No. 53,546
Customer No. 23413

Date: July 7, 2010
Address: 20 Church Street, 22nd Street
Hartford, CT 06103-3207
Telephone: (860) 286-2929
Fax: (860) 286-0115